

# Mineral Industry Surveys

---

**For information, contact:**

Daniel Edelstein, Copper Commodity Specialist  
U.S. Geological Survey  
989 National Center  
Reston, VA 20192  
Telephone: (703) 648-4978, Fax: (703) 648-7757  
E-mail: dedelste@usgs.gov

Hema Edupuganti (Data)  
Telephone: (703) 648-7951, Fax: (703) 648-8975  
E-mail: hedupuganti@usgs.gov

**Internet:** <http://minerals.usgs.gov/minerals>

## COPPER IN MAY 2003

Average daily mine production rose by 5% in May as several mines reported increased output. Smelter production rose sharply owing to the restart of Kennecott Utah Copper Co.'s smelter that had been temporarily closed. Downstream, electrolytic refinery production had yet to recover from the anode shortage. Though average daily consumption of refined copper was essentially unchanged, consumption for the first 5 months of 2003 was down by about 5% from that of the equivalent period in 2002. According to data compiled by the American Bureau of Metal Statistics, Inc. (2003), domestic producers' shipments of wirerod in May of 133,000 metric tons (t) were "weak but steady" and were 17.5% lower than shipments in May 2002. Year-to-date shipments through May were down by 11.6% from the comparative period in 2002. Year-to-date apparent U.S. consumption for wirerod declined even further, falling by 14%, owing to a 38% decline in net imports.

In May, Phelps Dodge Mining Co. announced that it had reached an agreement with the State of New Mexico on the financial assurances required as part of its closure and closeout plans for the company's New Mexico operations at Tyrone, Chino, and Cobre. Under the agreement, the operating companies for the three facilities will provide financial assurances to the State totaling \$484.1 million through a combination of cash (\$50 million), collateral (\$96.8 million), accelerated reclamation expenditures over the next 10 years (\$30 million), and a corporate guarantee (\$307.3 million). The financial assurances are required under the State's Water Quality Act and Mining Act. Phelps Dodge had previously met its financial assurances through surety bonds. Phelps Dodge concluded, however, that the increased cost of these bonds no longer made them economically feasible to use in support of reclamation programs (Phelps Dodge Mining Co., 2003).

Subsequent to the agreement, Phelps Dodge announced that one of its wholly owned subsidiaries, Chino Acquisition Inc., had agreed to acquire Heisei Mineral Corp.'s one-third interest in Chino Mines Co., the operating company for the Chino facilities. In order to meet its one-third obligations for closure and reclamation, Heisei will pay \$62 million into a closure trust fund, and \$50 million to Chino Acquisition for its share of other obligations related to Chino. Funds in the proposed trust fund will serve as a component of the financial assurance agreement reached in May with New

Mexico (Phelps Dodge Corp., 2003). Phelps Dodge has maintained the Chino Mine and smelter on care-and-maintenance since it streamlined production in January 2002, the only production coming from leaching of existing pads.

On June 6, the United States and Chile signed a Free Trade Agreement (FTA) that when fully implemented eliminates bilateral tariffs, including those on copper. According to the U.S. Trade Representative, the FTA is designed to lower trade barriers, promote economic integration, and expand economic opportunities for the peoples of both countries. The United States and Chile began negotiations on an FTA in December 2000, holding a series of 14 negotiating rounds, with technical work continuing through the week of signing. Subsequent to signing, the FTA needed approval from Congress, along with passage of an implementing bill, before being signed by the President. Under terms of the agreement, all tariffs and quotas on all goods and services would be eliminated immediately or after a transition period. More than 85% of bilateral trade in consumer and industrial products becomes duty-free immediately upon entry into force, and most remaining tariffs are to be eliminated within 4 years (Office of the U.S. Trade Representative, 2003). In the case of refined copper, the U.S. duty would initially be cut to 0.5%, one-half its current level, before being eliminated completely in the second year. According to congressional sources, the treaty's effective date is anticipated to be January 1, 2004 (Platts Metals Week, 2003).

## References Cited

- American Bureau of Metal Statistics, Inc., 2003, ABMS report 4—U.S. copper wirerod market: Chatham, NJ, American Bureau of Metal Statistics, Inc., July 18, 3 p.
- Office of the U. S. Trade Representative, 2003, United States and Chile sign historic Free Trade Agreement: Washington, D.C., Office of the U. S. Trade Representative press release, June 6, 4 p.
- Phelps Dodge Corp., 2003, Phelps Dodge agrees to acquire Heisei's interest in Chino Mines Co.: Phoenix, AZ, Phelps Dodge Corp. press release, July 31, 2 p.
- Phelps Dodge Mining Co., 2003, Phelps Dodge Mining Co., New Mexico reach agreement on financial assurance: Phoenix, AZ, Phelps Dodge Mining Co. news release, May 22, 1 p.
- Platts Metals Week, 2003, Tariff end should draw Chilean copper to U.S. in long run: Platts Metals Week, v. 74, no. 24, June 16, p. 1, 6.

TABLE 1  
SALIENT STATISTICS OF THE COPPER INDUSTRY IN THE UNITED STATES<sup>1</sup>

(Metric tons, unless otherwise specified)

	Source table <sup>2</sup>	2002 <sup>p</sup>	2003		
			April	May	January - May
Production:					
Primary:					
Mine, recoverable	(2)	1,140,000	87,300	93,700	452,000
Refinery:					
Electrolytic:					
Domestic	(4)	801,000	46,600	46,100	284,000
Foreign	(4)	40,000 <sup>3</sup>	W	W	W
Electrowon	(4)	601,000	47,400	50,400	246,000
Total	(4)	1,440,000	94,000	96,500	529,000
Secondary recoverable copper:					
Refineries	(5)	69,900	3,920	4,050	22,000
Ingot makers <sup>4</sup>	(5)	122,000	10,200	10,200	50,800
Brass and wire-rod mills	(5)	735,000	54,200 <sup>r</sup>	55,300	285,000
Foundries, et. <sup>4</sup>	(5)	64,800	5,400	5,400	27,000
Smelter, total	(3)	683,000	29,700	46,000	208,000
Consumption:					
Apparent	(8)	2,610,000	167,000	NA	NA
Refined (reported)	(7)	2,370,000	184,000 <sup>r</sup>	189,000	953,000
Purchased copper-base scrap	(9)	1,260,000	95,600 <sup>r</sup>	94,500	490,000
Stocks at end of period:					
Total refined	(11)	1,030,000	940,000	865,000	XX
Blister, etc.	(11)	44,400	41,900	46,900	XX
Prices:					
U.S. producer cathode (cents per pound) <sup>5</sup>	(12)	75.805	76.365	78.020	78.982
Imports: <sup>6</sup>					
Ores and concentrates <sup>7</sup>	(14)	71,900	86	NA	NA
Refined	(14)	927,000	78,500	NA	NA
Exports: <sup>6</sup>					
Ores and concentrates <sup>7</sup>	(15)	23,000	864	NA	NA
Refined	(15)	26,600	606	NA	NA

<sup>p</sup>Preliminary. <sup>r</sup>Revised. NA Not available. W Withheld to avoid disclosing company proprietary data; included in "Domestic." XX Not applicable.

<sup>1</sup>Data are rounded to no more than three significant digits, except prices; may not add to totals shown.

<sup>2</sup>Numbers in parentheses refer to the significant tables where these data are located.

<sup>3</sup>January-April only; excludes withheld data.

<sup>4</sup>Monthly data and 2002 cumulative data estimated based on 2001 monthly average.

<sup>5</sup>Source: Platts Metals Week.

<sup>6</sup>Source: U.S. Census Bureau.

<sup>7</sup>Copper content.

TABLE 2  
MINE PRODUCTION OF RECOVERABLE COPPER IN THE UNITED STATES<sup>1</sup>

(Metric tons)

Period	Recoverable copper			Contained copper		
	Arizona	Others <sup>2</sup>	Total	Electrowon	Concentrates <sup>3</sup>	Total
2002: <sup>p</sup>						
January - May <sup>r</sup>	321,000	157,000	479,000	252,000	233,000	485,000
May	67,500	29,900	97,400	51,300	47,500	98,800
June	63,400	29,800	93,200	51,000	43,400	94,400
July	63,600	29,700	93,300	50,900	43,400	94,300
August	65,300	28,400	93,700	51,000	43,900	94,900
September	62,700	34,500	97,200	48,900	49,700	98,600
October	62,200	32,000	94,200	48,600	46,800	95,500
November	62,500	32,800	95,300	47,100	49,400	96,500
December	66,500	30,500	96,900	50,500	47,700	98,200
Year	767,000	375,000	1,140,000	601,000	557,000	1,160,000
2003:						
January	62,400	28,600	91,100	49,900	42,300	92,200
February	55,800	26,700	82,500	45,900	37,600	83,500
March	64,000	33,100	97,200	52,000	46,500	98,500
April	59,800	27,600	87,300	47,400	41,100	88,500
May	62,400	31,300	93,700	50,400	45,600	96,000
January - May	304,000	147,000	452,000	246,000	213,000	459,000

<sup>p</sup>Preliminary. <sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes production from Alaska, Idaho, Missouri, Montana, Nevada, New Mexico, and Utah.

<sup>3</sup>Includes copper content of precipitates and other metal concentrates.

TABLE 3  
COPPER PRODUCED AT SMELTERS IN  
THE UNITED STATES, BY SOURCE<sup>1, 2</sup>

(Metric tons, copper content)

Period	Anode production
2002: <sup>p</sup>	
January - May	299,000 <sup>r</sup>
May	62,200
June	55,400
July	50,400
August	50,300
September	54,400
October	59,800
November	57,500
December	56,500
Total	683,000
2003:	
January	54,200
February	42,300
March	35,700
April	29,700
May	46,000
January - May	208,000

<sup>p</sup>Preliminary. <sup>r</sup>Revised.

<sup>1</sup>Includes blister, anode and copper from primary or secondary sources.

<sup>2</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

TABLE 4  
PRODUCTION OF REFINED COPPER, BY SOURCE AND METHOD OF RECOVERY<sup>1</sup>

(Metric tons)

Period	Primary materials				Scrap	Total refined
	Electrolytically refined <sup>2</sup>		Electrowon	Total		
	Domestic <sup>3</sup>	Foreign				
2002: <sup>p</sup>						
January - May <sup>r</sup>	318,000	40,000	252,000	611,000	30,500	641,000
May	76,100	W	51,300	127,000	7,590	135,000
June	70,000	W	51,000	121,000	7,090	128,000
July	74,100	W	50,900	125,000	5,500	130,000
August	67,600	W	51,000	119,000	5,880	124,000
September	66,100	W	48,900	115,000	4,820	120,000
October	73,100	W	48,600	122,000	7,120	129,000
November	67,900	W	47,100	115,000	5,120	120,000
December	64,600	W	50,500	115,000	3,930	119,000
Year	801,000	40,000 <sup>3</sup>	601,000	1,440,000	70,000	1,510,000
2003:						
January	69,800	W	49,900	120,000	4,500	124,000
February	60,500	W	45,900	106,000	3,910	110,000
March	60,700	W	52,000	113,000	5,680	118,000
April	46,600	W	47,400	94,000	3,930	97,900
May	46,100	W	50,400	96,500	4,050	101,000
January - May	284,000	W	246,000	529,000	22,100	551,000

<sup>P</sup>Preliminary. <sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data; included in "Domestic."

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Based on source of material at smelter level.

<sup>3</sup>January-April only; excludes withheld data.

TABLE 5  
COPPER RECOVERABLE IN UNALLOYED AND ALLOYED FORM FROM PURCHASED COPPER-BASE SCRAP<sup>1</sup>

(Metric tons, copper content)

Period	Refineries <sup>2</sup>		Ingot makers <sup>3</sup>		Brass and wire-rod mills		Foundries, etc. <sup>3</sup>		Total <sup>4</sup>
	New scrap	Old scrap	New scrap	Old scrap	New scrap	Old scrap	New scrap	Old scrap	
2002: <sup>P</sup>									
January - May	16,500 <sup>r</sup>	14,000 <sup>r</sup>	11,600 <sup>r</sup>	39,300 <sup>r</sup>	296,000 <sup>r</sup>	8,120	9,900 <sup>r</sup>	17,100 <sup>r</sup>	412,000 <sup>r</sup>
May	3,740	3,850	2,310	7,850	60,400	1,840	1,980	3,420	85,400
June	3,430	3,650	2,310	7,850	65,600	1,780	1,980	3,420	90,100
July	2,810	2,690	2,310	7,850	61,000	1,720	1,980	3,420	83,800
August	3,400	2,480	2,310	7,850	64,300	1,570	1,980	3,420	87,300
September	2,940	1,870	2,310	7,850	63,800	1,190	1,980	3,420	85,400
October	3,390	3,720	2,310	7,850	54,100	1,080	1,980	3,420	77,900
November	2,110	3,010	2,310	7,850	54,500	2,110	1,980	3,420	77,300
December	1,980	1,950	2,310	7,850	56,900	1,110	1,980	3,420	77,500
Year	36,500	33,400	27,800	94,200	716,000	18,700	23,700	41,100	991,000
2003:									
January	1,410	3,080	2,310	7,850	63,000 <sup>r</sup>	1,470	1,980	3,420	84,500 <sup>r</sup>
February	1,210	2,700	2,310	7,850	54,200 <sup>r</sup>	1,270	1,980	3,420	74,900 <sup>r</sup>
March	1,340	4,340	2,310	7,850	54,700 <sup>r</sup>	732	1,980	3,420	76,700 <sup>r</sup>
April	1,340	2,590	2,310	7,850	52,800 <sup>r</sup>	1,380	1,980	3,420	73,700 <sup>r</sup>
May	1,340	2,710	2,310	7,850	54,000	1,310	1,980	3,420	75,000
January - May	6,630	15,400	11,600	39,300	279,000	6,160	9,900	17,100	385,000

<sup>P</sup>Preliminary. <sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Electrolytically refined and fire-refined scrap based on source of material at smelter level.

<sup>3</sup>Monthly data and 2002 cumulative data estimated based on 2001 annual data.

<sup>4</sup>Does not include an estimate, based on reported 2001 data of 3,190 tons per month from new scrap and 2,010 tons per month of copper recovered from scrap other than copper-base.

TABLE 6  
PRODUCTION, SHIPMENTS, AND STOCKS OF BRASS AND WIRE-ROD SEMIFABRICATES<sup>1</sup>

(Metric tons, gross weight)

Period	Production		Shipments		Stocks, end of period	
	Brass mills	Wire-rod mills	Brass mills	Wire-rod mills	Brass mills	Wire-rod mills
2002: <sup>p</sup>						
January - May	618,000 <sup>r</sup>	743,000 <sup>r</sup>	622,000 <sup>r</sup>	737,000	XX	XX
May	127,000	155,000	128,000	158,000	46,700	33,000
June	130,000	139,000	129,000	143,000	50,500	28,500
July	119,000	144,000	120,000	147,000	50,000	25,400
August	128,000	148,000	128,000	152,000	50,400	21,500
September	124,000	145,000	122,000	148,000	53,200	18,600
October	127,000	158,000	125,000	155,000	55,800	20,900
November	114,000	138,000	116,000	129,000	53,400	28,900
December	106,000	108,000	103,000	108,000	56,200	29,000
Year	1,470,000	1,720,000	1,460,000	1,720,000	XX	XX
2003:						
January	118,000 <sup>r</sup>	140,000	119,000 <sup>r</sup>	139,000	55,200	29,500
February	110,000 <sup>r</sup>	133,000	109,000 <sup>r</sup>	132,000	55,600	30,200
March	116,000 <sup>r</sup>	139,000	116,000 <sup>r</sup>	132,000	55,900	37,300
April	115,000 <sup>r</sup>	127,000 <sup>r</sup>	116,000 <sup>r</sup>	127,000 <sup>r</sup>	54,900	37,200 <sup>r</sup>
May	110,000	126,000	111,000	129,000	58,200	34,500
January - May	569,000	665,000	571,000	660,000	XX	XX

<sup>p</sup>Preliminary. <sup>r</sup>Revised. XX Not applicable.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

TABLE 7  
CONSUMPTION OF REFINED COPPER<sup>1</sup>

(Metric tons)

Period and item	Wire-rod mills	Brass mills	Other plants <sup>2</sup>	Total
2002: <sup>p</sup>				
January - May <sup>r</sup>	727,000	255,000	24,800	1,010,000
May	152,000	55,500	4,950	213,000
June	138,000	54,700	4,950	198,000
July	142,000	49,300	4,950	197,000
August	152,000	51,400	4,950	209,000
September	143,000	50,900	4,950	199,000
October	151,000	50,200	4,950	206,000
November	142,000	46,300	4,950	193,000
December	113,000	40,600	4,950	159,000
Year	1,710,000	599,000	59,400	2,370,000
2003:				
January	137,000	47,200	4,950	189,000
February	140,000	49,600 <sup>r</sup>	4,950	195,000
March	142,000 <sup>r</sup>	49,200	4,950	197,000 <sup>r</sup>
April	129,000 <sup>r</sup>	49,800 <sup>r</sup>	4,950	184,000 <sup>r</sup>
May:				
Cathodes	133,000	38,600	1,140	173,000
Wire bars	--	--	(3)	(3)
Ingots and ingot bars	--	1,290	1,690	2,790
Cakes and slabs	--	(3)	(3)	(3)
Billets and other	W	9,970	2,120	12,700
Total	133,000	49,900	4,950	189,000
January - May	682,000	246,000	24,800	953,000

<sup>p</sup>Preliminary. <sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data; included with "Cathodes." -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not added to totals shown.

<sup>2</sup>Consumption by ingot makers, chemical plants, foundries, and miscellaneous manufacturers is estimated based on 2001 annual data.

<sup>3</sup>Withheld to avoid disclosing company proprietary data; included with "Billets and others."

TABLE 8  
U.S. APPARENT CONSUMPTION OF COPPER<sup>1</sup>

(Metric tons)

Period	Refined copper production	Copper in old scrap <sup>2</sup>	Refined general imports <sup>3</sup>	Refined exports <sup>3</sup>	Stock change during period	Apparent consumption
2002: <sup>P</sup>						
January - April	483,000 <sup>r</sup>	67,700 <sup>r</sup>	417,000	4,900	125,000 <sup>r</sup>	838,000 <sup>r</sup>
April	123,000	16,000 <sup>r</sup>	105,000	652	16,900	227,000 <sup>r</sup>
May	127,000	19,000	70,200	814	(15,000)	231,000
June	121,000	18,700	79,500	6,770	(33,900)	246,000
July	125,000	17,700	83,500	7,690	13,500	205,000
August	119,000	17,400	98,200	2,550	(7,350)	239,000
September	115,000	16,400	64,000	1,320	(4,620)	199,000
October	122,000	18,100	91,500	606	(14,300)	245,000
November	115,000	18,400	74,900	506	6,190	202,000
December	115,000	16,400	83,000	1,460	4,580	208,000
Year	1,440,000	210,000 <sup>r</sup>	1,060,000	26,600	74,000	2,610,000
2003:						
January	120,000	17,900	61,500	2,540	(23,300)	220,000
February	106,000	17,300	64,700	766	(69,200)	257,000
March	113,000	18,400	52,500	1,510	2,510	180,000
April	94,000	17,300	56,000	606	(231) <sup>r</sup>	167,000
May	96,500	17,300	NA	NA	(75,000)	NA
January - April	433,000	70,800	235,000	5,420	(90,200)	823,000

<sup>P</sup>Preliminary. <sup>r</sup>Revised. NA Not available.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Includes reported monthly production of copper from old scrap of copper-base, an estimate for an average of copper from non-copper-base materials based on 2001 data.

<sup>3</sup>Source: U.S. Census Bureau.

TABLE 9  
CONSUMPTION OF PURCHASED COPPER-BASE SCRAP<sup>1</sup>

(Metric tons, gross weight)

Period	Smelters and refineries		Ingot makers <sup>2</sup>		Brass and wire-rod mills <sup>3</sup>		Foundries, etc. <sup>2</sup>		Total scrap used
	New scrap	Old scrap	New scrap	Old scrap	New scrap	Old scrap	New scrap	Old scrap	
2002: <sup>p</sup>									
January - May	15,900 <sup>r</sup>	14,800 <sup>r</sup>	18,400 <sup>r</sup>	54,400 <sup>r</sup>	376,000 <sup>r</sup>	8,390	17,500 <sup>r</sup>	18,500 <sup>r</sup>	524,000 <sup>r</sup>
May	3,800	4,060	3,690	10,900	76,800	1,900	3,500	3,700	108,000
June	3,470	3,970	3,690	10,900	83,500	1,840	3,500	3,700	115,000
July	2,840	2,900	3,690	10,900	77,900	1,770	3,500	3,700	107,000
August	3,450	2,580	3,690	10,900	81,300	1,630	3,500	3,700	111,000
September	3,000	1,960	3,690	10,900	81,500	1,250	3,500	3,700	110,000
October	3,450	2,490	3,690	10,900	69,100	1,130	3,500	3,700	97,900
November	2,130	3,270	3,690	10,900	68,600	2,160	3,500	3,700	97,900
December	2,100	1,990	3,690	10,900	71,900	1,160	3,500	3,700	98,900
Year	36,400	33,900	44,300	131,000	910,000	19,300	42,000	44,400	1,260,000
2003:									
January	1,430	3,130	3,690	10,900	79,700 <sup>r</sup>	1,510	3,500	3,700	108,000
February	1,230	2,730	3,690	10,900	68,100 <sup>r</sup>	1,320	3,500	3,700	95,100 <sup>r</sup>
March	1,350	4,000	3,690	10,900	69,300 <sup>r</sup>	781	3,500	3,700	97,200 <sup>r</sup>
April	1,350	5,440	3,690	10,900	65,600 <sup>r</sup>	1,420	3,500	3,700	95,600 <sup>r</sup>
May	1,350	2,750	3,690	10,900	67,300	1,350	3,500	3,700	94,500
January - May	6,700	18,000	18,400	54,400	350,000	6,380	17,500	18,500	490,000

<sup>P</sup>Preliminary. <sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Monthly data and 2002 cumulative data estimated from 2001 annual data.

<sup>3</sup>Consumption at brass and wire-rod mills assumed equal to receipts.

TABLE 10  
CONSUMPTION OF PURCHASED COPPER-BASE SCRAP<sup>1,2</sup>

(Metric tons, gross weight)

Scrap type and processor	2002 <sup>p</sup>		2003			
	January - May	Year	March	April	May	January - May
No. 1 wire and heavy:						
Smelters and refiners	31,700 <sup>r</sup>	73,900 <sup>r</sup>	5,800 <sup>r</sup>	5,800 <sup>r</sup>	5,800	28,900
Brass and wire-rod mills	157,000 <sup>r</sup>	379,000	29,200	31,200	31,400	156,000
No. 2 mixed heavy and light:						
Smelters and refiners	18,500 <sup>r</sup>	43,000	3,430	4,870	2,190	15,300
Brass and wire-rod mills	2,540 <sup>r</sup>	6,630	470 <sup>r</sup>	349 <sup>r</sup>	428	2,320
Total unalloyed scrap:						
Smelters and refiners	50,100 <sup>r</sup>	117,000	9,230 <sup>r</sup>	10,700	7,990	44,200
Brass and wire-rod mills	159,000 <sup>r</sup>	386,000	29,700 <sup>r</sup>	31,500 <sup>r</sup>	31,800	158,000
Red brass: <sup>3</sup>						
All plants	22,300 <sup>r</sup>	53,200 <sup>r</sup>	4,380 <sup>r</sup>	4,210 <sup>r</sup>	4,200	21,400
Leaded yellow brass:						
All plants	145,000 <sup>r</sup>	340,000	29,000	24,400	25,500	134,000
Yellow and low brass:						
All plants	45,100 <sup>r</sup>	104,000	3,370 <sup>r</sup>	3,420	3,450	22,900
Cartridge cases and brass:						
Smelters and refiners	W	W	W	W	W	W
Brass mills	22,000 <sup>r</sup>	70,300	6,350 <sup>r</sup>	6,380 <sup>r</sup>	6,400	33,100
Auto radiators:						
Smelters and refiners	17,200 <sup>r</sup>	41,400 <sup>r</sup>	3,450 <sup>r</sup>	3,450 <sup>r</sup>	3,450	17,200
Bronzes:						
Smelters and refiners	4,910 <sup>r</sup>	11,800	983	983	983	4,920
Brass mills	5,270 <sup>r</sup>	12,600	455	444 <sup>r</sup>	457	2,380
Nickel-copper alloys:						
All plants	7,780 <sup>r</sup>	15,300	1,470 <sup>r</sup>	1,440 <sup>r</sup>	1,650	6,500
Low grade and residues:						
Smelters and refiners	6,050 <sup>r</sup>	14,500 <sup>r</sup>	1,210 <sup>r</sup>	1,210 <sup>r</sup>	1,210	6,060
Other alloy scrap: <sup>4</sup>						
Smelters and refiners <sup>5</sup>	1,010 <sup>r</sup>	2,420 <sup>r</sup>	202 <sup>r</sup>	202 <sup>r</sup>	202	1,010
Brass mills	2,860 <sup>r</sup>	6,980	274	159 <sup>r</sup>	168	1,530
Total alloyed scrap:						
Smelters and refiners	53,900 <sup>r</sup>	129,000 <sup>r</sup>	10,800 <sup>r</sup>	10,800 <sup>r</sup>	10,800	53,900
Brass mills	226,000 <sup>r</sup>	544,000	40,400 <sup>r</sup>	35,500 <sup>r</sup>	36,800	198,000
Total scrap:						
Smelters and refiners	104,000 <sup>r</sup>	246,000 <sup>r</sup>	20,000 <sup>r</sup>	21,500 <sup>r</sup>	18,800	98,100
Brass and wire-rod mills	385,000 <sup>r</sup>	930,000	70,100 <sup>r</sup>	67,100 <sup>r</sup>	68,700	356,000

<sup>p</sup>Preliminary. <sup>r</sup>Revised. W Withheld to avoid disclosing company proprietary data; included in "Other alloy scrap: Smelters and refiners."

<sup>1</sup>Does not include: consumption by foundries, chemical plants, and miscellaneous manufacturers, estimated to total about 7,290 tons of scrap per month in 2001; monthly data include estimates of about 14,700 tons of scrap per month consumed by ingot makers and several smelters that report on an annual basis.

<sup>2</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>3</sup>Includes composition turnings, silicon bronze, zincy bronze, railroad car boxes, cocks and faucets, gilding metal, and commercial bronze.

<sup>4</sup>Includes refinery brass, beryllium copper, phosphor copper, and aluminum bronze.

<sup>5</sup>Includes items indicated by symbol W.

TABLE 11  
COPPER STOCKS AT END OF PERIOD<sup>1</sup>

(Metric tons)

Period	Crude copper <sup>2</sup>	Refined copper					LME <sup>6</sup>	Total refined
		Refineries <sup>3</sup>	Wire-rod mills <sup>3</sup>	Brass mills <sup>3</sup>	Other <sup>4</sup>	Comex <sup>5</sup>		
2002: <sup>p</sup>								
May	91,900	16,100	26,800	24,900	3,600	304,000	691,000	1,070,000
June	88,700	16,500	20,700	23,200	3,600	322,000	646,000	1,030,000
July	101,000	15,500	25,500	27,500	3,600	338,000	636,000	1,050,000
August	81,500	12,100	24,600	28,800	3,600	341,000	628,000	1,040,000
September	76,700	11,600	27,100	26,600	3,600	344,000	621,000	1,030,000
October	76,500	10,600	29,300	22,600	3,600	346,000	607,000	1,020,000
November	76,300	14,400	21,200	32,700	3,600	347,000	607,000	1,030,000
December	44,400	11,700	23,000	28,700	3,600	362,000	601,000	1,030,000
2003:								
January	44,100	6,300	37,900	29,700	3,600	360,000	570,000	1,010,000
February	46,800	3,720	23,000	23,600	3,600	340,000	544,000	938,000
March	47,100	5,270	33,500	22,700	3,600	330,000	545,000	940,000
April	41,900	3,770	40,300 <sup>r</sup>	17,800	3,600	351,000	524,000	940,000
May	46,900	7,160	38,000	16,100	3,600	305,000	495,000	865,000

<sup>p</sup>Preliminary. <sup>r</sup>Revised.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Copper content of blister and other materials in transit and in process of refining.

<sup>3</sup>Stocks of refined copper as reported; no estimates are made for nonrespondents.

<sup>4</sup>Monthly estimates based on reported and 2001 annual data, comprising stocks at ingot makers, chemical plants, foundries, and miscellaneous manufacturers.

<sup>5</sup>Commodity Exchange Inc., New York.

<sup>6</sup>London Metal Exchange Ltd., U.S. warehouses.

TABLE 12  
AVERAGE PRICE OF COPPER IN THE UNITED STATES  
AND ON THE LONDON METAL EXCHANGE

(Cents per pound)

Period	U.S. producers delivered price cathode <sup>1</sup>	Comex first position <sup>2</sup>	LME cash price Grade A
2002:			
May	77.378	73.220	72.362
June	80.386	76.228	74.715
July	76.487	72.329	72.082
August	71.981	67.823	67.097
September	71.863	67.705	67.057
October	72.319	68.161	67.286
November	76.729	72.571	71.758
December	76.541	72.383	72.365
Year	75.805	71.672	70.721
2003:			
January	79.529	75.371	74.722
February	81.121	76.963	76.360
March	79.875	75.717	75.234
April	76.365	72.176	71.988
May	78.020	75.045	74.746
January - May	78.982	75.054	74.610

<sup>1</sup>Listed as "U.S. producer cathode."

<sup>2</sup>Listed as "Comex high grade first position."

Sources: Platts Metals Week and American Metal Market.



TABLE 13  
NEW YORK AVERAGE BUYING PRICES FOR COPPER SCRAP

(Cents per pound)

Month	Brass mills No. 1 scrap	Refiners No. 2 scrap	Dealers (New York)	
			No. 2 Scrap	Red brass turnings and borings
2002:				
May	71.98	60.39	44.00	37.00
June	74.78	71.38	44.00	37.00
July	71.91	60.59	44.00	37.00
August	66.89	55.66	42.27	37.00
September	66.80	55.68	40.80	37.00
October	66.83	56.70	39.09	37.00
November	71.38	60.50	41.00	37.00
December	71.60	61.31	41.00	37.00
Year	70.23	59.45	42.36	37.00
2003:				
January	73.67	62.38	46.90	37.33
February	75.55	63.95	52.00	38.00
March	74.69	64.26	52.00	38.00
April	70.82	61.80	49.41	38.00
May	73.95	65.43	49.00	38.00
January - May	73.74	63.56	49.86	37.87

Source: American Metal Market.

TABLE 14  
U.S. IMPORTS FOR CONSUMPTION OF COPPER (UNMANUFACTURED), BY CLASS<sup>1</sup>

(Metric tons, copper content)

Country or territory	Ore and concentrate			Matte, ash and precipitates			Blister and anodes			Refined		
	2003			2003			2003			2003		
	January -			January -			January -			January -		
	2002	April	April	2002	April	April	2002	April	April	2002	April	April
Belgium	--	--	--	--	46	46	--	--	--	34	--	--
Brazil	--	--	--	--	--	--	--	--	--	45,000	--	2,010
Canada	8,350	86	86	75	--	38	83,700	7,130	29,200	235,000	15,200	66,200
Chile	51,800 <sup>r</sup>	--	4,940	--	--	--	37,400	2,910	13,900	245,000	38,100	123,000
Germany	--	--	--	--	18	59	(2)	--	--	3,260	75	4,080
Indonesia	2,910	--	--	--	--	--	--	--	--	--	--	--
Malaysia	--	--	--	17	--	2	--	--	--	--	--	--
Mexico	4	--	--	324	68	259	16,200	1,080	3,470	57,200	2,740	6,310
Namibia	--	--	--	--	--	--	6,340	--	5,960	--	--	--
Peru	5,960	--	--	--	--	--	4,730	--	--	288,000	21,900	86,100
Russia	--	--	--	--	--	--	--	--	--	28,800	--	--
Taiwan	17	--	--	621	39	202	--	--	--	10	--	--
Turkey	2,910	--	--	--	--	--	--	--	--	--	--	--
United Kingdom	--	--	--	--	--	--	2	(2)	(2)	3,410	--	6,930
Other	2	--	--	2	--	1	70	--	--	21,900 <sup>r</sup>	498	2,720
Total	71,900	86	5,020	1,040	171	607	148,000	11,100	52,500	927,000	78,500	297,000

<sup>r</sup>Revised. -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 15  
U.S. EXPORTS OF COPPER (UNMANUFACTURED), BY CLASS<sup>1</sup>

(Metric tons, copper content)

Country or territory	Ore and concentrate			Matte, ash and precipitates			Blister and anodes			Refined		
	2003			2003			2003			2003		
	January -			January -			January -			January -		
	2002	April	April	2002	April	April	2002	April	April	2002	April	April
Australia	21	4	4	5	--	--	77	9	25	1,650	--	--
Belgium	42	21	62	12	--	--	179	--	--	--	2	2
Canada	17,500	817	3,770	2,560	1,860	2,140	17,700	1,220	5,560	3,130	303	1,000
China	1,110	--	30	63	2	16	515	52	271	14,900	2	2,020
Egypt	--	--	--	--	--	--	--	--	--	2,200	--	--
Germany	28	--	--	85	--	--	241	20	100	79	11	61
Hong Kong	25	--	2	160	--	--	2,600	218	890	38	4	8
India	9	--	--	153	95	95	83	2	39	825	101	642
Japan	36	6	67	1,330	14	17	40	4	84	48	9	25
Korea, Republic of	197	--	--	40	--	2	707	67	218	524	37	133
Mexico	2,620	12	159	12,400	530	3,340	38	55	55	135	40	1,120
Netherlands	38	--	--	35	--	1	1,100	--	--	16	--	--
Peru	1,230	--	214	39	--	--	--	--	--	--	--	--
Philippines	--	--	--	3	--	--	5,880	2	16	3	--	119
Singapore	60	--	2	(2)	(2)	(2)	614	40	142	7	5	24
Spain	--	--	--	4	--	(2)	259	100	240	6	--	--
Sri Lanka	--	--	--	--	--	--	80	--	--	176	38	104
Taiwan	80	--	11	104	--	--	1,000	40	419	1,630	--	--
United Kingdom	16	--	35	65	8	36	469	32	149	527	14	20
Other	54	4	50	75 <sup>r</sup>	7	63	1,320 <sup>r</sup>	78	268	682 <sup>r</sup>	40	145
Total	23,000	864	4,410	17,100	2,510	5,710	32,900	1,940	8,480	26,600	606	5,420

<sup>r</sup>Revised. -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Less than 1/2 unit.

Source: U.S. Census Bureau.

TABLE 16  
U.S. COPPER SCRAP TRADE<sup>1</sup>

(Metric tons, gross weight)

Country or territory	Imports						Exports					
	Unalloyed			Alloyed			Unalloyed			Alloyed		
	2003			2003			2003			2003		
	2002	April	January - April	2002	April	January - April	2002	April	January - April	2002	April	January - April
Barbados	229	19	93	18	--	--	--	--	--	--	--	--
Belgium	--	--	--	--	--	--	2,210	295	911	7,050	504	1,450
Canada	13,900	427	2,140	38,700	3,660	12,700	20,100	1,970	7,450	19,900	1,690	6,510
Chile	611	--	18	78	--	--	144	--	--	66	4	4
China	--	--	--	547	36	168	122,000	19,000	69,800	155,000	16,300	62,900
Colombia	--	--	--	601	82	153	--	--	--	2	--	--
Costa Rica	1,100	31	249	458	15	98	--	--	--	2	--	6
Dominican Republic	1,360	101	420	884	60	304	--	--	--	--	--	--
Germany	118	--	4	1,110	333	692	14,200	381	3,200	16,400	560	2,910
Guatemala	536	21	155	1,190	68	314	--	--	--	(2)	--	--
Honduras	399	26	124	347	43	111	--	--	--	--	--	--
Hong Kong	3	--	--	--	--	--	7,180	138	413	6,140	1,060	2,550
India	--	--	--	(2)	--	--	3,920	783	1,810	43,500	3,670	13,600
Jamaica	362	37	246	239	5	40	--	--	--	--	--	--
Japan	97	--	20	193	45	173	11,000	439	2,700	9,120	606	3,780
Korea, Republic of	19	--	--	40	--	14	14,900	2,020	9,150	18,700	1,730	6,460
Malaysia	--	--	--	264	31	56	--	1,180	2,370	243	35	53
Mexico	9,250	459	2,400	18,300	1,460	5,520	2,280	180	573	248	23	368
Nicaragua	321	33	124	170	15	64	--	--	--	--	--	--
Norway	--	351	351	--	--	39	--	--	--	253	38	131
Panama	173	--	--	792	88	330	--	--	--	79	--	--
Taiwan	15	--	--	389	13	157	10,100	720	3,620	9,060	855	3,060
United Kingdom	155	39	117	1,760	60	253	17	--	--	1,380	61	206
Venezuela	93	--	12	2,090	33	251	--	--	--	--	--	--
Other	497 <sup>r</sup>	35	160	2,680 <sup>r</sup>	232	838	4,680	339	1,440	10,500 <sup>r</sup>	564	3,130
Total	29,300	1,580	6,640	70,900	6,280	22,200	213,000	27,400	103,000	298,000	27,700	107,000

<sup>r</sup>Revised. -- Zero.

<sup>1</sup>Data are rounded to no more than three significant digits; may not add to totals shown.

<sup>2</sup>Less than 1/2 unit.

Source: U.S. Census Bureau.